Union Slough NWR is currently reviewing the uses of Commercial Haying, Commercial Grazing, and Commercial Woodcutting as habitat management tools on the Refuge. The process that we use to review these uses is called "Compatibility." In the compatibility process, we develop Compatibility Determinations to describe and evaluate each use. Prior to implementing a use, the general public is invited to comment on the use's Compatibility Determination.

The following Compatibility Determinations are open for public comment until 4 pm on Monday, December 1st, 2014. If you have questions or need clarification regarding the Compatibility Determinations, please call the Refuge at 515-928-2523.

If you wish to comment on the Compatibility Determinations please submit your comments in one of the following ways:

1. **Drop them off at the Union Slough NWR Office located 6 miles east of Bancroft, Iowa on County Highway A-42.**
2. **Mail them to Union Slough NWR, 1710 360th St., Titonka, IA 50480: or**
3. **Email them to tim_a_miller@fws.gov**

Compatibility Determination

Use: Prescribed Commercial Livestock Grazing

Refuge Name: Union Slough National Wildlife Refuge

Establishing and Acquisition Authorities:

Union Slough National Wildlife Refuge was established by Executive Order 7976, dated September 19, 1938. Additional lands have subsequently been acquired under the authority of the Migratory Bird Conservation Act of 1929 (16 USC 715-715r) and the National Wildlife Refuge System Administration Act of 1966 (16 USC 668dd-668ee).

Refuge Purposes:

"…as a refuge and breeding ground for migratory birds and other wildlife:…" Executive Order 7976, dated September 14, 1938

"…for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." 16 U.S.C. § 715d (Migratory Bird Conservation Act)

"…conservation, management, and … restoration of the fish, wildlife and plant resources and their habitats… for the benefit of present and future generations of Americans…" 16 U.S.C. § 668dd(a)(2) (National Wildlife Refuge System Administration Act)

National Wildlife Refuge System Mission:

The mission of the Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

Description of Use:

Limited removal of grass and forb vegetation by domestic livestock, chiefly cattle, but potentially including other domestic livestock to improve grassland vigor and health. Prescribed controlled grazing is recognized as a valuable tool to remove standing vegetation, reduce vegetative litter, and suppress undesirable woody vegetation and other invasive plant species.

Is the use a proposed new use or an existing use?
Proposed new use.

Is the use a priority public use?
No.

Where would the use be conducted?
On all refuge units as prescribed by the Habitat Management Plan and subsequent rotation.

When would the use be conducted?
Grazing may take place anytime from April through November. Grazing may either be high intensity and short term duration, or season long depending on the management prescription

and treatment reason. There will be three typical seasons of use however two may be combined:

1. Early spring (mid-April to late May) on native prairie or seeded native grasses designed to reduce the vigor of exotic species and increase the vigor of native species.
2. Summer grazing (July 15 to September 1) may be used on both native and non-native, especially on non-native grasslands, to stimulate the grassland after the peak nesting season yet allow vegetative regrowth in the fall.
3. Fall grazing (September 1 to October 31) will be designed to have effects similar to spring grazing, mostly on native prairie remnants or fields seeded with native tallgrass prairie species.

How would the use be conducted?
Fencing and control of livestock will be the responsibility of the cooperating livestock producer. Market rate grazing fees will be required of permittees. Market grazing fees will include typical market deductions for unusual fencing requirements, required cattle movement, or special watering needs. Rates will be assessed in Animal Unit Months (AUM). One AUM is equal to one adult cow for one month (thirty days). One cow/calf pair is equal to 1.20 AUM. Market rates will be determined annually in consultation with the U.S. Department of Agriculture based on prevailing local average grazing rates.

Frequency of grazing on any unit will be based on site-specific plans and availability of other management tools such as prescribed fire and haying. Typically, a unit would be grazed for either one or two years and then would not be grazed for several years, allowing a period of rest. Cooperating livestock producers will be selected by closed bid process, drawing, or the priority system outlined in the U.S. Fish and Wildlife Service Refuge Manual 6 RM 9 (1982).

Why is this use being proposed?
Refuge habitat management tool. Grazing will introduce habitat disturbance necessary to promote ideal conditions for many grassland nesting migratory birds including waterfowl. The Draft Refuge Habitat Management Plan outlines strategies to increase grassland vigor and diversity by using haying, grazing and prescribed burning on refuge upland units at least once every four years. Prescribed grazing may also be utilized to set back seeding of undesirable exotic plant species (examples: crown vetch and sweet clover).

Availability of Resources:

What resources are needed to properly and safely administer use?
Developing grazing agreements and monitoring compliance and biological effects will require some Service resources. Most grazing costs, such as fencing, monitoring herd health, and so on, are assumed by the permittee. Station resources will be used to acquire some unit infrastructure such as boundary fencing and electrical fencing. Some alternative grassland management tools such as prescribed burning, mowing, or haying would be required if grazing is not utilized. Haying has comparable costs to controlled grazing since it also requires administering special use permits. Mowing is more expensive since all costs are assumed by the agency. Prescribed burning is an effective grassland management tool, but staff limitations prevent burning as many acres as is desirable each year. In addition, there is an ecological benefit to rotating grassland management techniques and seasons, such as grazing one year and burning another.

Are existing refuge resources adequate to properly and safely administer the use?
Yes.

Anticipated Impacts of the Use:

How does the use affect refuge purposes, the Refuge System mission, and refuge goals and/or objectives?
Grazing by domestic livestock has severe short-term effects on grassland communities. Many of these effects are desirable and are designed to maintain and improve healthy grassland communities. Some of these effects include removing standing vegetation, trampling of other vegetation, and reducing populations of pioneering woody plants. Other effects of grazing are more harmful but generally short-lived.

Grazing on Refuge lands will provide suitable habitat of ideal height for migratory birds such as meadowlark, upland sandpiper, and pectoral sandpiper. Also these grazed units will be attractive habitat for nesting waterfowl such as blue-winged teal, and pintail.

Grazing in the spring may cause direct loss of grassland bird nests due to trampling and loss of standing vegetation. Grazing at any time of year creates an aesthetic issue of concern; seeing public land being grazed by domestic livestock reduces the appeal of the visit for some visitors. Fortunately, controlled grazing is typically of short duration and does not occur annually on any unit. Grazing livestock can create minor direct disturbance of wildlife, but any harm should be negligible. There is a slight potential for conflict between members of the public and livestock or the permittee, particularly in the autumn when most Waterfowl Production Areas receive their heaviest use. All permittees will be advised that the unit is open to the public for hunting and other recreation. There is a very slight risk of injury to the public caused by livestock. Most visitors who are uncomfortable using property containing livestock are likely to select another unit or another time of year for their visit.

Public Review and Comment:

Determination:

_____ Use is Not Compatible

__X__ Use is Compatible with the Following Stipulations

Stipulations Necessary to Ensure Compatibility:

1. Grazing will not occur more frequently than three out of every five years without the preparation of a site-specific justification.
2. Use of insecticides is not permitted on refuge.
3. All equipment for grazing including ATV's, UTV's or horses must be clean and free of invasive species plant material including seeds before entering the refuge. The Refuge manager reserves the right to inspect all equipment and livestock prior to refuge entry.

4. Supplemental feeding will not be permitted on the refuge without a site specific justification and Refuge Supervisor's approval.
5. Grazing program will adhere to the 2014 Region 3 Grazing and Haying Program Guidance.

Justification:

Prescribed controlled grazing by domestic livestock will not materially interfere with or detract from the purposes for which the refuge was established. Limited livestock grazing creates temporary disturbances to vegetation of which many are desirable for grassland management. Grazing produces an undesirable but short-term impact to grassland bird nesting and site aesthetics. Prescribed controlled grazing is an alternative management tool that can be used to replace or complement prescribed burning, mowing, or haying on grasslands. Without occasional disturbance caused by mowing, haying, burning, or grazing, the health of the grassland community would decline, as would the potential for waterfowl/ migratory bird production. Strategies in the Draft Refuge Habitat Management Plan suggest the use of haying, grazing and burning be uses as a management tool to increase grassland vigor and structure for migratory birds. Haying would be used in conjunction with prescribed burning and grazing at least once every four years on each refuge upland unit.

Signature: Refuge Manager /Timothy A. Miller/ / 11/17/14 /
(Signature and Date)

Concurrence: Regional Chief /<name>/ / <date> /
(Signature and Date)

Mandatory 10- or 15-year Re-evaluation Date: 2029

Compatibility Determination

Use: Commercial Hay Harvest

Refuge Name: Union Slough National Wildlife Refuge

Establishing and Acquisition Authorities:

Union Slough National Wildlife Refuge was established by Executive Order 7976, dated September 19, 1938. Additional lands have subsequently been acquired under the authority of the Migratory Bird Conservation Act of 1929 (16 USC 715-715r) and the National Wildlife Refuge System Administration Act of 1966 (16 USC 668dd-668ee).

Refuge Purposes:

"…as a refuge and breeding ground for migratory birds and other wildlife:…" Executive Order 7976, dated September 14, 1938

"…for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." 16 U.S.C. § 715d (Migratory Bird Conservation Act)

"…conservation, management, and … restoration of the fish, wildlife and plant resources and their habitats… for the benefit of present and future generations of Americans…" 16 U.S.C. § 668dd(a)(2) (National Wildlife Refuge System Administration Act)

National Wildlife Refuge System Mission:

The mission of the Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

Description of Use:

The cutting and removal, by baling and transport to an off-refuge location, of grasses and forbs, either non-native cool season species such as brome or native warm or cool season species. This use is typically completed by a cooperative farmer under authority of a cooperative farming agreement or special use permit issued by the refuge manager.

Is the use a proposed new use or an existing use?
Existing use.

Is the use a priority public use?
No.

Where would the use be conducted?
Habitat units of refuge

When would the use be conducted?
Seasonally, after July 15 of each year

How would the use be conducted?

Haying can be an effective management tool as part of an overall grassland management plan to improve and maintain grasslands for the benefit of migratory birds. Grasslands need periodic renovation to maintain vigor, diversity, and the structure necessary for migratory bird use. Haying is an effective alternative to burning or grazing, which are the two other primary means used to maintain grassland vigor. If local site conditions preclude use of prescribe fire due to hazards to neighboring property or a similar challenge, removal of accumulated biomass through haying would reduce unwanted over-story cover and encroaching woody vegetation. This would allow for more vigorous regrowth of desirable species following the haying, although results are neither as dramatic nor as positive as with the use of prescribed fire.

Strategies outlined in the Draft Refuge Habitat Management Plan outline maintaining vigor in uplands, and providing structural diversity for migratory birds, by using haying, grazing and prescribed burning as a treatment, on each unit, at least once every four years.

Haying of a nonnative cool season field is an effective preparation tool used prior to spraying the field with herbicide to kill all existing vegetation. Removal of the heavy grass over-story through haying allows the chemical to be more effective at treating the target plants. Thorough removal of the unwanted grasses ensures greater success of the planted native grasses for both inter-seeding or plowing the soil prior to seeding. Finally, haying can be used to establish firebreaks that facilitate safe prescribed fire. Strategically placed grass strips are hayed in early fall, so the vegetation green-ups earlier in the spring with no dead over-story biomass. This green up allows for effective prescribed fire breaks.

Why is this use being proposed?
Used as a habitat management tool haying will introduce habitat disturbance necessary to promote ideal conditions for many grassland nesting migratory birds including waterfowl. Also this use is outlined as a strategy in the Draft Refuge Habitat Management Plan to promote vigor and structural diversity for migratory birds.

Availability of Resources:

What resources are needed to properly and safely administer use?
Planning for this use would not require any additional resources and would be a normal part of grassland management. Staff time will be need to complete the hay bid process, develop public notices, and issue special use permits and bills for collection.

Are existing refuge resources adequate to properly and safely administer the use?
Yes.

Anticipated Impacts of the Use:

How does the use affect the refuge purposes, the Refuge System mission, and refuge goals and/or objectives?
Haying will result in short-term disturbances and long-term benefits to both resident and migratory wildlife that use the refuge. Short-term impacts will include disturbance and displacement typical of any noisy heavy equipment operation. Cutting and removal of standing grasses will also result in short-term loss of habitat for those species requiring tall grasses for feeding and perching (i.e., Bobolink and Dickcissel). However other migratory birds like: upland sandpiper, meadowlarks, and pectoral sandpipers benefit from the resulting low vegetation height. Long-term benefits will result as increased vigor of regrown grasses and establishment of highly desirable native tallgrass species improves conditions for those same species affected

by the short-term negative impacts. Longer-term negative impacts may occur to resident wildlife species such as pheasant that would lose overwintering habitat in the hayed areas. However, strict time constraints placed on this use will limit anticipated impacts to these relatively minor areas.

Public Review and Comment:

Determination:

_____ Use is Not Compatible

__X__ Use is Compatible with the Following Stipulations

Stipulations Necessary to Ensure Compatibility:

1. Haying will only be allowed after July 15 to minimize disturbance to nesting migratory birds. In normal years, most birds are off the nest by this date.
2. Bales must be removed from the refuge units timely and as required in the permit.
3. All equipment for haying, including ATV's and UTV's, must be clean and free of invasive species plant material, including seeds, before entering an Refuge property. The Refuge manager may inspect and deny the use of any equipment/vehicle/horse that appears to contain invasive species plant material.
4. Refuge haying program will conform to the FWS Region 3 Grazing and Haying Program Guidance.

Justification:

Haying will not materially interfere with waterfowl/ migratory bird breeding and nesting if completed within the necessary stipulations. Use of haying, as a management tool can be a valuable technique for providing long-term habitat improvements to grassland that otherwise, would degrade through natural succession or dominance of non-native plants. Without this tool, the areas would suffer encroachment of undesirable woody species such as box elder or ash or would remain in unwanted non-native cool season grasses such as brome. Use of the areas by waterfowl or grassland-dependent species such as Bobolink, Dickcissel, or Grasshopper Sparrow would slowly decline in the absence of haying or other similar management. Strategies in the Draft Refuge Habitat Management Plan suggest the use of haying, grazing and burning be uses as a management tool to increase grassland vigor and structure for migratory birds. Haying would be used in conjunction with prescribed burning and grazing at least once every four years on each refuge upland unit.

Signature: Refuge Manager /Timothy A. Miller/ /11/17/14 /
(Signature and Date)

Concurrence: Regional Chief /<name>/ / <date> /
(Signature and Date)

Mandatory 10- or 15-year Re-evaluation Date: 2029

Compatibility Determination

Use: Wood Cutting

Refuge Name: Union Slough National Wildlife Refuge

Establishing and Acquisition Authorities:

Union Slough National Wildlife Refuge was established by Executive Order 7976, dated September 19, 1938. Additional lands have subsequently been acquired under the authority of the Migratory Bird Conservation Act of 1929 (16 USC 715-715r) and the National Wildlife Refuge System Administration Act of 1966 (16 USC 668dd-668ee).

Refuge Purposes:

"…as a refuge and breeding ground for migratory birds and other wildlife:…" Executive Order 7976, dated September 14, 1938

"…for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." 16 U.S.C. § 715d (Migratory Bird Conservation Act)

"…conservation, management, and … restoration of the fish, wildlife and plant resources and their habitats… for the benefit of present and future generations of Americans…" 16 U.S.C. § 668dd(a)(2) (National Wildlife Refuge System Administration Act)

National Wildlife Refuge System Mission:

The mission of the Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

Description of Use:

Removal of standing and/or fallen trees applies to all wood removal activities regardless of the ultimate use of the wood (firewood, lumber, pulp, etc.). Woodcutting by the public is considered an economic use of a district natural resource and would be allowed on the district under the authority of a special use permit issued by the district manager.

Is the use a proposed new use or an existing use?
Re-evaluation of existing use

Is the use a priority public use?
No.

Where would the use be conducted?
Refuge units

When would the use be conducted?
Wood cutting activities could be authorized throughout the year; however, the majority of activity would occur during the winter months when frozen ground would facilitate access and afford protection to underlying soils and desired vegetation.

How would the use be conducted?
The refuge is located at the southernmost portion of the Prairie Pothole Region, an area known for its duck production and tall grass prairie. These uplands and marsh provide the first suitable breeding habitat available to waterfowl on their northern flight. They also benefit other migratory birds and resident wildlife as well. Today, the tallgrass prairie ecosystem is globally endangered, and most of Iowa's wetlands have been drained. As a result, many grassland- and wetland-dependent migratory birds are in great peril.

The refuge is comprised of restored and intact grassland in the uplands surrounding the marsh and stream units. Historically the uplands surrounding the slough were void of trees, including the lowland habitat adjacent to Buffalo Creek and the East Fork of the Des Moines River. These refuge units contain both native and nonnative grass and forb species, as well as encroaching woody vegetation. If left untreated, overtime, the encroaching woody vegetation reduces or eliminates desirable prairie/wetland herbaceous vegetation growth necessary for waterfowl and other migratory birds. Typically, prescribed burning, haying, and grazing are used as tools to inhibit the encroaching woody vegetation. However, various factors can limit the use of these tools on all or portions of some refuge. Nevertheless, active removal of the encroaching woody vegetation by woodcutting is often less limiting. Therefore, woodcutting would be another tool that would accomplish the same objectives by promoting the reestablishment of the grasses and forbs in the uplands and maintain healthy wetlands. Due to the loss of large wildfires and large-ungulate grazing prior to European settlement and the fast-growing nature of many tree species, wood cutting has become a more frequently utilized tool to help restore and maintain the tallgrass prairie community and its associated wetlands. This is especially true as funding and other factors limit the use of primary grassland management tools.

Equipment used for harvest would depend on the site and its management objectives, as well as the permittee's capabilities and may include axes, chainsaws, tractor-mounted shredders and shears, and traditional logging equipment.

Why is this use being proposed?
Refuge management tool tied to an economic use.

Availability of Resources:

What resources are needed to properly and safely administer use?
Staff time will be needed to administer special use permits for woodcutting, along with mapping and designating areas that need woody encroachment removed. Approximately twelve staff hours per year are anticipated for this use.

Are existing refuge resources adequate to properly and safely administer the use?
Yes.

Anticipated Impacts of the Use:

How does the use affect district purposes, the Refuge System mission, and district goals and/or objectives?
In permitting this type of activity, the potential exists to directly impact waterfowl production and migratory birds. This could happen by displacement of birds from localized areas due to disturbance, or crushing of nests because of access for this activity. These impacts are easily avoided by timing of the activity in accordance with site-specific characteristics. In limited and rare instances, a small number of individuals of tree-nesting species (e.g. wood duck, hooded merganser, and other migratory birds etc.) may be displaced from a local area after their nest trees are removed. The indirect impacts to waterfowl production that will occur would be primarily beneficial by facilitating the restoration of tallgrass prairie and removing artificially created predator habitat from the refuge. Access for removing wood may affect habitat by rutting soils, destroying ground cover, creating weed seedbeds, and increasing sedimentation due to runoff in nearby wetlands. However, these impacts can also be avoided by regulating the timing of the activity.

Public Review and Comment:

This compatibility determination is available for public review

Determination:

_____ Use is Not Compatible

__X__ Use is Compatible with the Following Stipulations*

Stipulations Necessary to Ensure Compatibility:

1. Travel off designated routes, will be limited to periods when ground is frozen.
2. Wood harvest activities will avoid the primary nesting period for waterfowl and migratory birds.
3. Special use permits are required for this use.
4. Best management practices will be implemented to avoid disturbance, erosion, habitat damage, and weed dispersal.
5. All applicable federal, State, and special regulations will apply.

Justification:

Any direct impacts on waterfowl production and migratory bird use (take, disturbance, etc.) can be largely avoided by timing the activity so that it is not coincident with the waterfowl/migratory bird production season. Removal of trees in certain instances will, on occasion, eliminate Wood Duck, Hooded Merganser, or other cavity-nesting species habitat. This would be an irregular and occasional impact and, since most wood harvest will be associated with restoration sites, it is unlikely that these areas would have provided historic nesting sites. Due to the benefits that would be realized by other waterfowl species, and the abundance of artificial and natural nest

sites for cavity-nesting species in the area, these impacts would not significantly detract from the refuge purpose or Refuge System mission.

Impacts to the habitat because of access to refuge units for wood removal purposes are potentially significant but also easily avoided. Areas where woody species are removed for the purpose of conversion of the habitat type to prairie will likely receive follow-up treatments of burning, farming, or both. Ground disturbance in these areas is less problematic and possibly desirable depending on the specific site. Access to and from these areas will need to be carefully controlled via special use permit to avoid impacts such as rutting and increased sedimentation in area wetlands due to runoff. If existing roads are not present, access can be restricted to periods of frozen ground to avoid or minimize impacts to underlying vegetation and soils.

The refuge may have impacts to visitors in the form of noise (from chainsaws and equipment) and the temporary brush piles left from the cutting. These impacts will be avoided by permitting woodcutting during time of lower public use such as late summer and winter months.

Other indirect impacts are generally considered positive and thus do not materially interfere with or detract from the purpose of the refuge or the Refuge System mission. The removal of trees along trails, in shelterbelts, and invaded uplands of prairie habitat will aid in meeting the breeding and migratory needs of the refuges' focal resources by eliminating predator habitat. Individuals participating in the wood harvest program will be under special use permit, and thus site-specific stipulations will ensure resource protection and achievement of management goals. Control of woody species encroachment on prairie habitats is a necessary management activity for the refuge in converting and maintaining areas in their historical grassland condition and directly supports the mission of the Refuge System.

Signature: Refuge Manager /Timothy A. Miller/ / 11/17/2014 /
(Signature and Date)

Concurrence: Regional Chief /<name>/ / <date> /
(Signature and Date)

Mandatory 10- or 15-year Re-evaluation Date: 2024